

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims

Claim 1 (currently amended): A process for controlling a circulating fluid bed oxygenates to olefins reactor which comprises:

contacting an oxygenate-containing feedstock in a reaction zone in the presence of a molecular sieve oxygenates to olefins conversion catalyst under oxygenate conversion conditions;

measuring a reactor temperature-related function as a set variable selected from at least one of (1) reactant feed rate, (2) feed enthalpy, (3) reactor temperature-related function, and (4) catalyst hold-up in the riser of the reactor, said set variable functionally corresponding to conversion of reactant as a process variable selected from at least one of i) space velocity, ii) average reaction temperature, iii) conversion of reactant, and iv) average coke level on catalyst;

comparing said measured set variable with an optimal set variable to provide a signal which is a function of the difference between said measured set variable and said optimal set variable;

adjusting as a function of said signal, activity of the catalyst in the reactor as a corresponding manipulated variable selected from at least one of a) at least one feed flow control valve, b) feed preheat rate, c) activity of the catalyst in the reactor, and d) amount of catalyst in the reaction zone, to improve at least one of light olefin production rate and light olefin selectivity.

Claims 2-9 (canceled)

Claim 10 (original): The process of claim 1 further comprising the step of contacting an oxygenate feed with a silicoaluminophosphate (SAPO) molecular sieve catalyst under conditions effective to convert said oxygenate feed to olefins, wherein said conditions comprise a weight hourly space velocity (WHSV) of from about 20 hr⁻¹ to about 1000 hr⁻¹.

Claim 11 (original): The process of claim 1 wherein said conditions comprise a temperature of at least about 300°C.

Claim 12 (original): The process of claim 1 wherein said conditions comprise a temperature in the range of from about 400°C. to about 500°C.

Claim 13 (original): The process of claim 1 wherein said silicoaluminophosphate molecular sieve catalyst is selected from the group consisting of SAPO-17, SAPO-18, SAPO-34, and SAPO-44.

Claim 14 (original): The process of claim 1 wherein said molecular sieve catalyst is SAPO-34.

Claim 15 (original): The process of claim 1 wherein said oxygenate feed is selected from the group consisting of aliphatic alcohols, aliphatic ethers, and aliphatic carbonyl compounds.

Claim 16 (original): The process of claim 15 wherein said aliphatic moiety ranges from about 1 to about 10 carbon atoms.

Claim 17 (original): The process of claim 15 wherein said oxygenate feed comprises methanol.

Claim 18 (original): The process of claim 1 wherein said reactor temperature-related function is a reactor mid-temperature taken at a single location between about 20% to about 80% of the axial length of the reactor.

Claim 19 (original): The process of claim 1 wherein said reactor temperature-related function is a rate of temperature rise along a portion of the reactor.